



公司及产品简介
E-Profile of Company and Products

江苏苏新轴座有限公司
Jiangsu SUXIN bearing housings Co.,LTD

WHO WE ARE

Jiangsu SUXIN bearing housings Co.,LTD
 Top leader manufacturer of Insert Bearing/Bearing housings/Bearing units in China.
 A member of CBIA.

WHAT WE SUPPLY

- * Insert Bearing
- * Insert Bearing Housings
- * Insert Bearing Units
- * Bearing accessories
- * Automotive parts (Casting freewheel)

WHO WE SERVE

Domestically,

TR

SDEC power

WUXI diesel engine works

YUCHAI group

Overseas,

SNR France

NTN Japan

JIB Korea

EU area

USA

Brazil

WHY CHOOSE US

- * Over 20 years' experience of producing insert bearing housings and units.
- * Over 80,000 SQM factory land and 65,000 SQM workshop area
- * Over 400 sets of equipments including outer spherical boring machine, digital control lathe, specialized grinder, CNC and so on.
- * Over 20,000 Tons casting parts yearly or 5,500,000 sets yearly capacity of insert bearing units
- * Located near Shanghai port for Easy products' transfer and shipping.
- * Certificate of ISO9001, IATF16949, ISO14001,SGS
- * Professional technical and QC teams' support in producing/new designs/after-sales servise.

WHAT WE BELIEVE

Professional engineers/Qualified products/Timely delivery/Responsible service



苏新[®]外球面球轴承 **SUXIN[®] Insert Bearings**



苏新®外球面球轴承

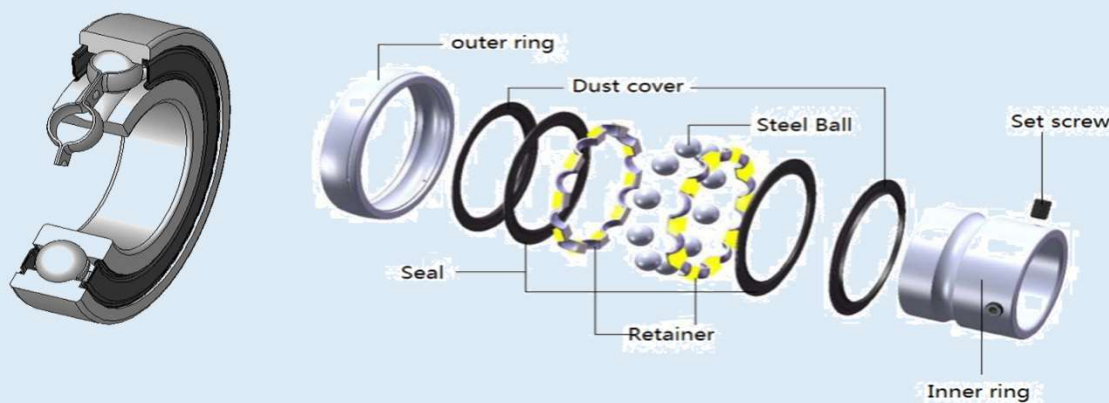
1. 外球面球轴承概述

外球面球轴承又称之为外球面体球轴承，因其轴承内部滚动体为钢球，所以外球面球轴承隶属于深沟球轴承的一种。

2. 标准外球面球轴承的结构

苏新®外球面球轴承的内外部结构一般包括（参Fig.2）轴承内/外圈，不锈钢钢球，保持架，一对带钢骨的复合橡胶（不锈钢外球面球轴承将使用硅胶材质）密封圈和一对防尘盖（部分型号不需要）。

Pig.2



3. 外球面球轴承的原材料

3.1 外球面球轴承的套圈和钢球在工作时反复承受高接触应力的同时还保持高精度旋转。因此外球面球轴承的套圈和钢球以及保持架的材料要求有以下特点：

- ① 硬度高
- ② 滚动疲劳强度大
- ③ 高耐磨性
- ④ 高机械强度
- ⑤ 尺寸稳定性好

苏新®外球面球轴承生产使用的原材料是高碳铬轴承钢即（GCr15）和不锈钢。

SUXIN® Insetr Bearings

1. Introduction of insert bearings

Insert bearing also is called External sphere ball bearing, for the rolling element inside is stell ball, so it belongs to Deep groove ball bearings.

2. Structure of standard insert bearings

Structure of standard insert bearing includes(see Fig.2): Outer and Inner rings, steel balls, retainers(cages), a doublex of synthetic rubber seals with steel-reinforced. If stainless steel bearing will be sealed by silicon rubber seals. And a pair of dust covers(some types of bearing without)

3. Raw material of insert bearings

3.1 The raw material of insert bearings is required in high specification of for that the rings and steel ball repeatedly bare heavy contact stress while maintaining high precision rotation. So insert bearings' material or spare part should have

- 1) High hardness
- 2) Perfact rolling fatigue strength
- 3) High grinding resistance
- 4) High mechanical strength
- 5) Good dimensional stability

SUXIN insert bearing is produced with High-grade carbon chromium bearing steel which is GCr15 and stainless steel.



3.2 苏新®外球面球轴承保持架

3.2.1 波浪形钢支架

该支架的原材料为10优质碳素钢薄板。这种轴承支架是将两个钢材质的波浪型压制架焊接在一起组成的。是一种标准轴承内支架，适用于大多数不带油槽的向心球轴承，其能够提供高强度的支撑，同时又能持久保证钢球与轴承套圈间的游隙无变化。该轴承支架适用于温度非常高的工作环境，但是轴承一旦出现偏心的情况，波浪形轴承保持架则对轴承的自动调心起不了太大作用。



3.2 Retainers of SUXIN® insert bearings

3.2.1 Pressed-steel welded cages (Steel waving type cages)

This kind of retainer raw material is high grade carbon steel. consists of two formed cage halves welded together.

This type of cage is standard for most radial non-filling-slot ball bearings, provide high strength and rigidity, as well as good uniformity of ball-to-pocket clearance. It is suitable for very high temperature applications, but does not accommodate application misalignment.



3.2.2 根据客户要求或几款特定型号轴承使用塑料保持架和不锈钢保持架

3.2.2 The plastic cages and stainless steel retainers will be used in bearing according to requirement of customers. see

3.2.3 有部分客户根据使用情况要求使用尼龙保持架，该保持架材质轻盈且具有高耐磨性，但是成本过高且不适用于高温环境下作业的轴承。

3.2.3 Sometims the nylon retainers are used as customized. Nylon retainer has good performance of light weight and ware resistance, but its cost is higher and can not use in bearing which is working in high temperature condition.



4. 苏新®外球面球轴承的简单生产工艺流程

4.1外球面球轴承套圈（内外圈）生产

原料轴承钢管或不锈钢圆钢→切割内外圈毛胚件→车削加工内外圈毛胚→套圈热处理（淬火和回火）→含顶丝孔内圈上顶丝孔周围局部回火→粗磨/精磨/超精磨内外圈→内外圈倒角处理→消磁/清洗→检验→防锈处理→轴承内外圈成品

4.2 轴承装配流程

待装配套圈（内外圈）→内外圈滚道尺寸分选（同时钢球直径分选）→选配游隙（同时准备待装保持架）→合套→消磁/清洗：→注脂(根据要求)→压装密封圈→压装防尘盖：→激光打码→终检→成品入库

4. Producing process of SUXIN® insert bearings

4.1 Producing process of Rings

- Raw material
- Cutting blank outer/inner rings
- Machining&turning blank rings
- Heat treatment of rings
- Tempering set screw hole area on inner ring
- Rough grinding
- Precision grinding
- Superfinishing
- Corner
- Degaussing/Washing
- Inspection
- Anti-rust treatment
- Finished rings

4.2 Assembly process of bearings

- Finished outer/inner rings
- Prepare rings
- Sorting rings and steel balls
- Match clearance
- Assembly rings/steel balls/retainers
- Degaussing/Washing
- Filling grease if need
- Press/install seal
- Press/install dust cover if need
- Laser mark
- Final inspection
- Stock/Packing



5. 苏新®外球面球轴承的特点及特性

5.1 预先注入足够的优质润滑脂

苏新®外球面球轴承预先注入润滑脂后可以直接与装配好的轴承单元安装于轴上，因而避免在安装轴承单元过程中有害物质进入轴承内部。

5.2 苏新®外球面球轴承外圈装有独特的止动销（球），该止动销允许轴承自动调心，同时与轴承座上止动槽配合又能防止轴承外圈旋转，使轴承使用寿命更长。

5.3 苏新®外球面球轴承内圈经过回火处理，保持韧性及抗冲击性。内圈顶丝孔周围经局部高温回火后，性能更优，可防止顶丝在轴承工作期间脱落松脱，同时顶丝拧紧也不会导致轴承内圈爆裂。

5.4 苏新®外球面球轴承可轻易锁紧在轴上

5.4.1 顶丝锁紧。拧紧两个紧定螺丝（位于内圈伸长端上）来锁紧轴承与轴。根据客户特殊要求，部分顶丝的螺纹上涂尼龙涂料以提高其防松性能。

5.4.2 紧定套固定。适用于带锥度孔外球面球轴承。轴承的内圈内径孔为带1:12锥度的圆锥孔，通过齿形垫片折起后咬紧内圈外表面的槽口的方式连接紧定套后与紧定套一起锁紧轴。

5.4.3 偏心套锁紧。适用于轴承内圈孔一端有固定的偏心度，有偏心度相同的偏心套与其合作。偏心套结构也是用顶丝锁紧，只是顶丝不在内圈上，在偏心套上。



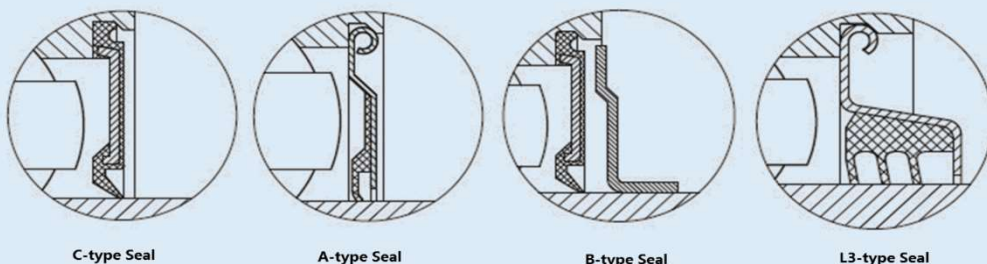
6. 苏新®外球面球轴承的密封性

标准外球面球轴承两面均有耐热防油橡胶密封圈及钢板防尘盖组合密封。

防尘盖装配在轴承内圈外径上与内圈一起旋转，能有效地防止外部异物进入轴承内部，并能抵抗外部压力保护轴承。

这种密封圈和防尘盖组成的组合密封结构能防止泥土、灰尘、水分进入轴承内部，同时又能阻止轴承内部的润滑脂外漏。使轴承在恶劣的工作环境下也能保持完美的工作性能。

6.1 苏新®外球面球轴承常用的几种密封形如下：



C-type Seal

A-type Seal

B-type Seal

L3-type Seal

5. SUXIN® insert bearings features and advantages

5.1 SUXIN® insert bearings are filled with semi-synthetic oil based lithium grease during assembly. Then they can be fixed to working shaft directly to avoid outside matters going inside of bearings when workers install the bearing units.

5.2 In the outer ring of SUXIN® insert bearing, has a special anti-rotation pin or ball which allows the bearing self-aligning, and prevents the outer ring from rotating by working with anti-rotation groove in housings to make sure longer working life of the bearings.

5.3 Inner ring of SUXIN® insert bearing which has set screw hole is dealt with tempering treatment to keep its toughness and impact resistance. Especially the area around screw hole. Then it will be tougher than which without the same treatment to avoid the screw loosening even the inner ring burst when screw tightened over load.

5.4 SUXIN® insert bearing fitting easily to shaft

Depending on the bearing type, the following methods of fitting easily to the shaft employed.

5.4.1 Inner ring is fastened onto the shaft in two places by set screws. and the set screws' location is on the longer side of inner ring. Sometime there will be nylon coating on the thread of set screws to improve its loosening resistance according to customer's special requirement.

5.4.2 Inner has a tapered bore and is fitted to the shaft by means of an adapter. This fitting way is suitable for insert bearing with 1:12 tapered bore.

The adapter will lock the shaft with gasket after which tooth is bended and occlude the sleeves on inner ring's surface.

5.4.3 Fitting the shaft by the eccentric locking collar system

The inner ring is fastened to the shaft by means of eccentrics grooves provided at the side of inner ring and on the collar. This system is also locked by set screws but different from 5.4.1 that its set screws will be located on the collar but not on the inner ring.

6. SUXIN® insert bearings Tightness Performance

In standard SUXIN® insert bearings, there are a couple sets of heat-resistant & oil proof rubber seal and steel dust cover on the both sides.

The dust cover is fixed with inner ring's side, it means that it will be rotated with inner ring together when bearing working to prevent foreign matters and break pressure entering the bearing from outside.

SUXIN® insert bearing's tightness instructure is good at preventing sand, dust, and water entering bearing, meanwhile improve un-leakage of grease inside of bearing to keep the bearing have good performance in terrible working condition.

6.1 SUXIN insert bearing seal types as following

7. 苏新®外球面球轴承负荷能力大

苏新®外球面球轴承与相对应的轴承座配套组装之后，外球面球轴承能承受以径向负荷为主的径向与轴向联合负荷。

8. 苏新®外球面球轴承的自动调心特性

苏新®外球面球轴承安装简便，拆装简单，具有适当自动调心性能。外球面轴承的内径标准公差为正公差，从而保证了其与轴配合时的轻盈。与相应轴承座组装之后，外球面轴承外圈表面与相接触的轴座内沟表面均为球形，因此整个轴承单元具有自动调心性。

9. 苏新®外球面球轴承可重复再次做润滑处理。外球面轴承外圈表面均带有油孔，可重复注脂以达到再次润滑效果。且与之配套的轴承座上也带有油嘴，因此轴承单元在后期维护时无需拆卸轴承即可再次注脂从而润滑轴承。

* 免维护型外球面球轴承，则无油孔结构，不需要再次注脂。



10. 苏新®外球面球轴承的分类

10.1 按照外球面轴承与轴的装配方式划分

10.1.1 带顶丝外球面轴承

该类轴承代号为UC200系列（轻型），UC300系列（重型）以及变形产品UB（SB）200系列。一般带顶丝外球面轴承的内圈伸出部分上有2个顶丝，其夹角为120度（也可根据需要更改为60度/90度/45度）。该类轴承的特点就是与轴配合时拧紧顶丝顶在轴上，从而起到固定轴的作用。配合工作环境要求必须振动范围小。带顶丝外球面轴承比较普遍常见，广泛应用于纺织机械，陶瓷机械，农业机械，食品机械，输送带设备等制造行业。



7. SUXIN® insert bearing with High loading capacity

After installed with correct housings, the strong material of housing and bearing can help SUXIN® insert bearing to support united loads of radial loading and axial loading during its running to reduce rotation friction. Insert bearing's working performance is decided by the result of axial clearance.

The bearing's temperature will be increased if axial clearance is smaller than standard level. Conversely, the bearing will be broken. So it is important to adjust the axial clearance to a suitable level during bearing units installation and operation. Sometimes need interference fitting to improve its strength if necessary.

8. SUXIN® insert bearing is easy to mounten / unassembly, and it is self-aligning.

For the bearing, it can tolerate some misalignment of the inner and outer ring due to the smaller contact area between steel balls and rings. At the same time, the inner ring diameter has positive tolerance to ensure easy joint of bearing and shaft. When the bearing assembled in correct housing, the outer surface of bearing and inner surface of housing are spherical to make the bearing units self-aligning.

9. Relubricatable

SUXIN® insert bearing has a grease filling hole to get its relubricatable feature. The grease or oil will reach the steel ball surface through the lubrication groove on inside surface of outer ring. Even the housing which is fit to the right bearing also has a lubrication hole on its top surface for filling grease easily that no need to open the bearing when make the relubricate treatment.

* Maintenance free type bearing no need relubrication. It will be grease injected before bearing assembly finished. And there will be no grease filling hole in bearing structure even on the matching housing.

10. Types of SUXIN® insert bearings

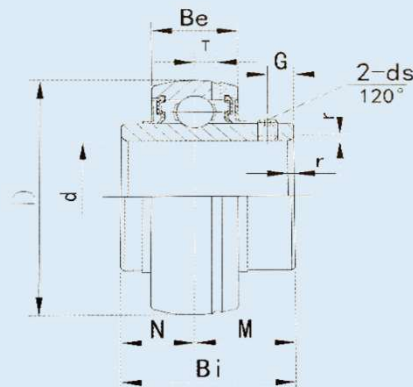
10.1 According to joint type of bearing and shaft

10.1.1 Insert bearing with set screws

Code UC200 series(light type),UC300 series(heavy type) and variant UB(SB)200 series. Usually there are two set screws on inner ring which angle of position is 120° (will be changed to 60°/90°/45° as special requirement).

Tightening the set screws to the surface of shaft to lock it with inner ring of bearing.

This type of insert bearing requires working condition with low vibration. And they are always used in textile machines, ceramic equipment, agriculture machinery, food machinery, conveyer system and so on.



10.1.2 内径带锥度外球面轴承

该类轴承代号为UK200系列，UK300系列。内径带锥度外球面轴承的内圈内径为1:12比例的锥度孔。使用时要与紧定套结构配套使用。同一使用环境条件下，此类轴承可承受比带顶丝外球面轴承更大的负荷，因为与其配合的紧定套同型号的内径要比带顶丝外球面轴承的内径小一些（紧定套本身具有一定厚度）。举例说明：

假定，需要固定同一根直径为45MM的轴（暂不考虑装配位置空间环境）。

a. 与45MM轴配套的带顶丝外球面轴承内径为45MM，即UC209型轴承可直接装配锁紧该轴。

b. 如选用带锥度外球面轴承来锁紧该轴，需要紧定套内径为45MM，而与之配套的轴承内径需要稍大于45MM即选用UK210轴承进行装配锁紧。显然UK210的强度负荷大于UC209。



10.1.2 Insert bearing with tapered bore

Code UK200 series, UK300 series. The inner of this type bearing is tapered bore with ratio 1:12, it will be used with an adapter together when fix the bearing to shaft.

This type bearing can load more capacity than bearing with set screws when bearing units are assembly with same diamention shaft for inner of adapter is smaller than bearing with set screws'.

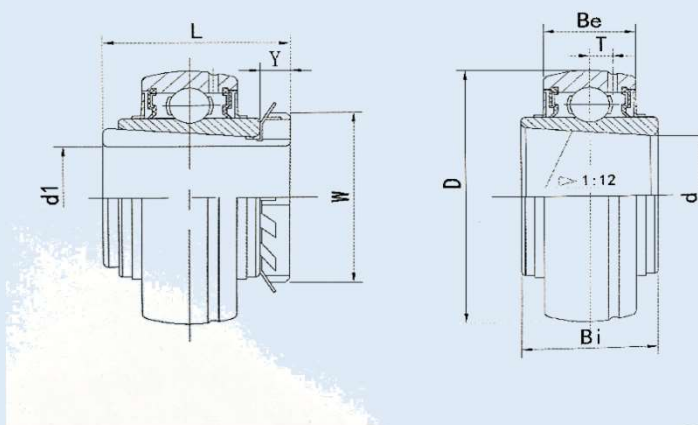
eg.

To fix shaft with diamention 45mm

* if use insert bearing with set screws, inner 45mm UC209 can be matched directly

* if use insert bearing with tapered bore, need an adapter with diamention 45mm. It means the bearing inner should be bigger than 45mm to give space to the adapter. Then UK210 bearing should be chosed.

So, same shaft 45mm but UK210 is stronger than UC209.



10.1.3 带偏心套外球面轴承

该类轴承的代号为UEL200系列，UEL300系列，SA200系列。带偏心套外球面轴承内圈一端孔口有一定的偏心度，与具有同样偏心度的偏心套配合后再用顶丝锁紧轴。该类轴承主要适用于跳动比较猛烈的结构上，轴承本身的偏心结构的配合可以有效降低跳动的猛烈程度。

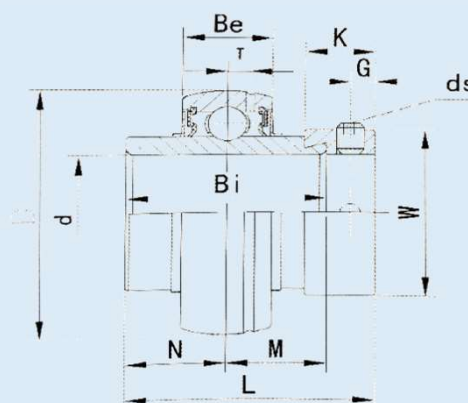


10.1.3 Insert bearing with eccentric locking collar

Code UEL200 series, UEL300 series, SA200 series.

In the eccentric loacking collar system, the inner ring of bearing is fastened to the shaft by means of eccentric grooves provided at the side of inner ring and on the collar.

This type of insert bearing is mainly used in the structure where has violent relatively beating. And the eccentric joint can reduce the jitter effectively.



附表：常见外球面轴承结构形式代号

代号	外球面轴承结构型式
UC(UCX)	带顶丝外球面轴承
UK	带圆锥孔外球面轴承
UB	一端平头带顶丝外球面轴承
UEL	带偏心套外球面轴承
UD	两端平头外球面轴承
UE	轻型带偏心套外球面轴承

Att: Type code of normal insert bearings

CODE	STRUCTURE
UC(UCX)	with set screws
UK	with tapered bore
UB	one flat end with set screws
UEL	with eccentric locking collar system
UD	Two flat ends inner ring
UE	Light type with eccentric locking collar system

11. 苏新®外球面球轴承推荐的应用行业

苏新®外球面球轴承因其品质卓越且使用成本低廉，被广泛推荐应用于以下行业：

- 农业机械
- 食品，饮料加工以及包装机械
- 输送链系统
- 材料运转系统
- 纺织机械设备
- 工业鼓风机
- 特殊设备，如自动洗车系统，体院馆健身设备，卡丁车等

11. Applications for SUXIN insert bearings

For its high quality, good performance and low using cost, SUXIN® insert bearings are widely used in the industries as following:

- Agriculture equipment
- Food/Soft drink producing machines/equipments
- conveyer system
- material transfer sytem
- textile machinery
- industrial fans
- special system such as car auto-washing line, gym structure, go-kart and so on.

